



ESL ELECTROSCIENCE

CERAMIC TAPES &
THICK-FILM MATERIALS

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CERMET PLATINUM/GOLD CONDUCTOR

5837

ESL 5837 is a platinum gold conductor solderable both on alumina and when printed and separately fired over 4905-CH dielectric. It is used in high reliability multilayer circuits where chip carriers are soldered to the top layer. Re-fire capability on alumina is also high. A typical system that is used is 8836/4905-CH/5837. 5837 can also be used on beryllia substrates with good initial adhesion. However, the aged adhesion is lower than that obtained on 96% alumina substrates. This may be improved by firing at 980°C.

PASTE DATA

Rheology:

Thixotropic, screen-printable paste

Viscosity:

(Brookfield RVT, 10rpm,
ABZ spindle, 25.5 ± 0.5 °C)

350 ± 25 Pa.s

Bonding Mechanism:

Mixed-bonded

Shelf Life (20 - 25 °C):

6 months

PROCESSING

Screen Mesh, Emulsion:

325 S/S, 20 µm

Levelling Time (at 20 °C):

5 - 10 min

Drying Time (at 125 °C):

10 -15 min

Firing Temperature Range:

850 - 1000°C in air

Optimum:

850°C

Time at peak:

10 min

Rate of Ascent/Descent:

50 - 60 °C / min

Substrate for Calibration:

96% alumina

Thinner:

ESL 401

ESL Europe 5837 0202-F

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See Caution and Disclaimer on other side.

TYPICAL PROPERTIES

Fired Thickness:

(measured on a 2 mm x 2 mm pad on 96% alumina)

12.0 ± 2.0 µm

Approximate Coverage:

55 - 70 cm²/g

Resistivity:

40 - 65 mΩ/□

Printing Resolution:

(line/space)

0.125 mm / 0.125 mm

Solder Wettability:

(RMA Flux, 5 sec. dip)

62Sn/36Pb/2Ag (220°C)

95 - 100 %

62Sn/36Pb/2Ag (250°C, over 4905-CH)

90 - 95 %

Solder Leach:

(No. of 10 sec. dips to double lowest resistance of
100 mm x 0.25 mm conductor, 62Sn/36Pb/2Ag, 220°C)

10 dips

Adhesion:

(90° pull, 2 mm x 2 mm pads, 62Sn/36Pb/2Ag)

Initial pull strength:

5.5 - 8.0 kg

Aged 48 hours at 150°C:

3.2 - 6.5 kg

Initial pull strength:

on 4905-CH

4.0 - 8.0 kg

Aged 48 hours at 150°C:

on 4905-CH

3.2 - 5.0 kg

ESL Europe 5837 0202-F

CAUTION: Proper industrial safety precautions should be exercised in using these products. Use with adequate ventilation. Avoid prolonged contact with skin or inhalation of any vapours emitted during use or heating of these compositions. The use of safety eye goggles, gloves or hand protection creams is recommended. Wash hands or skin thoroughly with soap and water after using these products. Do not eat or smoke in areas where these materials are used. Refer to appropriate MSDS sheet.

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